XXXI. *Descriptions of Three New Species of Hirudo. By the Reverend William Kirby, A. L. S. With an additional Note by G. Shaw, M. D. F. R. S. and F. L. S.*

Read May 7, 1793.

BEING desirous of adding my mite to the treasures of the Linnean Society, I take the liberty of offering a description of three species of Hirudo, which appear to me to be non-descript.

1. Hirudo alba.

H. depressa alba interaneis fuscis ramosis, margine crispante, extremitate acutiuscula.

Description.—The H. alba is a species of singular beauty. Its colour is a most delicate white, which is interrupted by the elegant ramifications of the viscera, or interanea as Linnæus has termed them.

* These have the appearance of some of the most beautiful fuci. They begin a little behind the eyes (of which there are only two) in a point, and, proceeding as it were from a common rachis, grow gradually wider and wider till they arrive at the ovary where the rachis ends; but the ramifications parting off on each

* This elegant appearance of the viscera is lost when the worm is deprived of its proper nourishment. It then becomes entirely white.

side

ſide ſurround the ovary, behind which they unite again, and terminate in a point at the tail.

The ovary itſelf is of an oblong form, and generally pointed at the ends. In it are uſually two ſpots which have a luminous appearance. It contains three or four roundiſh eggs*.

This ſpecies aſſumes a variety of forms: when at reſt it is ſomewhat ovate, but when in motion it becomes linear.

The margin is white, and very tranſparent, affording an elegant contraſt to the interanea. At reſt it is uſually criſped, and frequently exhibits the appearance of many angular projections. Theſe are ſometimes reduced to four, of which two form a kind of hunch, one on each ſide, juſt below the head, and two juſt above the tail, which gives the little animal a very ſingular form. At other times its contour is indented by many ſinuoſities.

The extremity of the tail, though naturally acute, is ſometimes ſo contracted as to appear rounded. Its motion is uniform.

When in motion it is uſually between ſix and eight lines in length.

Found amongſt the Lemna gibba, in the Autumn, in a ſlow ſtream.

2. H. NIGRA.

H. depreſſa nigra linearis abdomine nigro.

Deſcription. This ſpecies is entirely black, of a deep rich colour like velvet, except that juſt above the tail there is uſually a ſemi-pellucid ſpot of a whitiſh caſt†.

* Upon examining one of theſe eggs ſub lente, I diſcovered two black points upon it exactly ſimilar to the eyes of the old one: whence perhaps it was a fœtus, and this ſpecies viviparous.

† The whole worm, when kept long in water in a glaſs, ſeems to incline to an aſh colour; occaſioned perhaps by the want of its proper food.

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I never could diſcover that it had any eyes. When at reſt it is nearly circular, but when it moves it becomes linear; and then the centre of the head is uſually protended into an obtuſe angle.

Its motion (if I may ſo expreſs myſelf) is *beautifully* ſmooth and uniform; and it is a very amuſing ſight to obſerve theſe little creatures, in a clear ſhallow ſtream, on a calm day, by myriads ſmoothly gliding over its bed.

At reſt it is ſeldom above one line in length, but extends itſelf to three when it moves.

Found in ſlow ſtreams, I believe almoſt the whole year, upon aquatic plants.

3. H. CRENATA. Tab. 29.

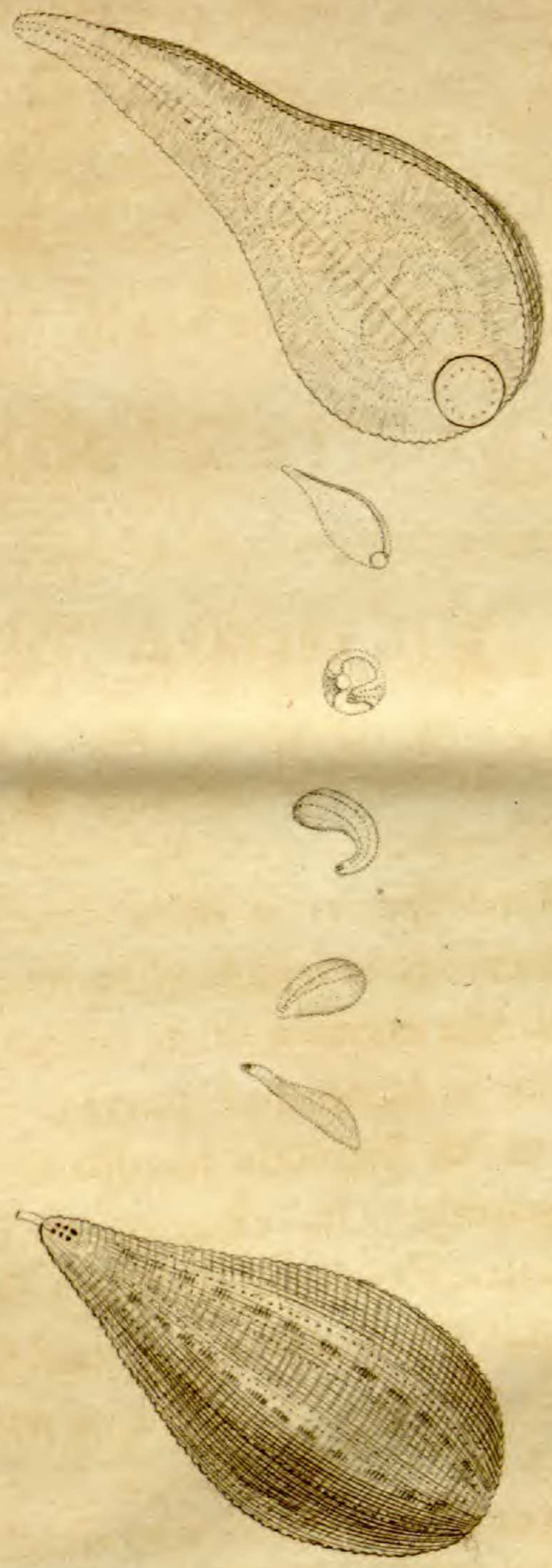
H. ſubdepreſſa ſubovata ſtriata ſtriis tranſverſis *annularibus*? margine crenulato.

Deſcription.—This ſpecies is of a greeniſh caſt, ſometimes inclining to aſh-colour. It is tranſverſely ſtriated with annular ſtriæ, from whence ariſe the crenatæ of its margin.

Its upper ſurface is ſomewhat convex. Its interanea are very viſible by means of its vitreous tranſparency; they appear like ſo many ſeparate granula. Its excrements I have ſometimes ſeen appended to the anus, its form exactly reſembling the interanea; they appeared to adhere to the worm, and to each other, by means of a gelatinous tranſparent excretion, which hung in places in oblong guttulæ.

It has two eyes only, which are very much approximated.

Its motion is very ſimilar to that of the larvæ of the geometræ, and is performed by means of the adheſive property of the head and the tail. The tail being fixed to the ſides of the glaſs, it extends



Hirudo crenata

tends its head to a point at the greateſt diſtance from the tail where it adheres; then bringing its tail into contact with its head, it contracts itſelf into a hemiſpheric form, and by this mean moves very faſt.

It has alſo another action in which it reſembles the larvæ of the geometræ. When diſturbed, it fixes itſelf by its tail, and then, raiſing itſelf perpendicular to the plane of poſition, moves its head from ſide to ſide, ſupported merely by the expanded adheſive orb of the tail.

I found this with the preceding ones, but it ſeems a rarer ſpecies.

Obſervation.—The Hirudo *alba* and *nigra*, as alſo the *viridis* of Dr. Shaw, appear to me not rightly referred to this genus, as they by no means agree with the Linnean definition. Corpus oblongum *ore caudaque in orbiculum expandendis ſe promovens*. The motion of theſe three ſpecies is uniform and equable, nor do they poſſeſs that orbicular adheſive expanſion of the head and tail which conſtitutes the eſſential diſtinction of the genus Hirudo. Qu. Are they ſufficiently diſtinct to conſtitute a new genus?

ADDITIONAL NOTE,

By Dr. Shaw.

THE *Hirudo nigra* of Mr. Kirby I believe to be the *Planaria fuſca* of Pallas and Gmelin, Syſt. Nat. p. 390.

The *Hirudo alba* of Mr. Kirby is probably the *Planaria lactea* of Gmelin, deſcribed by Müller in the *Zoologia Danica*; and in the *It. Gothl.* it is conſidered by Linnæus as a *Hirudo*.

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